MONITORING OBJECTIVES AND SPATIAL SCALES

Federal regulations indicate that a minimum of four monitoring objectives should be met in establishing a SLAMS network. The network is to have stations that monitor: (1) the highest pollutant concentrations; (2) the representative concentrations in areas of high population density; (3) the impact of major pollution emissions sources; and (4) the general background concentration levels.

The physical siting of the air monitoring station must achieve a spatial scale of representativeness that is consistent with the monitoring objective. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories. It estimates the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations.

The categories of spatial scale are:

- Microscale - An area of uniform pollutant concentrations ranging from several meters up to 100 meters.
- Middle Scale - Uniform pollutant concentrations in an area of about 100 meters to 0.5 kilometer.
- Neighborhood Scale - An area with dimensions in the 0.5 to 4 .0 kilometer range.
- Urban Scale - Citywide pollutant conditions with dimensions ranging from 4 to 50 kilometers.
- Regional Scale - An entire rural area of the same general geography (this area ranges from tens to hundreds of kilometers).

Monitoring objectives and associated spatial scales are summarized in the table below.

Monitoring Objective	**Appropriate Spatial Scale**
Highest concentration or source impact	Micro, Middle, Neighborhood, or Urban*
High population densities, representative concentration	Middle, Neighborhood, or Urban
Background levels	Neighborhood or Regional

***** Less frequently